THE EFFECTS OF FOOD STAMPS ON LABOR SUPPLY

Thomas Fraker
Mathematica Policy Research

Robert Moffitt
Brown University and Mathematica Policy Research

Presented at the annual conference of the Association for
Public Policy Analysis and Management
Crystal City, Virginia
November 3, 1989

This research was funded by the Food and Nutrition Service of the U.S. Department of Agriculture under Contract No. FNS 53-3198-3-120 and Contract No. FNS 53-3198-5-47. The opinions expressed herein, as well as any errors, are those of the authors and not of the sponsoring agency.

Title Page

I. MOTIVATION FOR THE RESEARCH

Research on the labor-supply effects of transfer programs has been motivated by a debate among policymakers and social scientists on the proper goals of such programs. Four goals are widely acknowledged:

1. To provide adequate assistance to the needy
2. To target benefits to those most in need
3. To equitably treat households that are similar in size and income
4. To establish a benefit structure that encourages market labor

Inconsistency among these goals has been at the heart of much of the policy debate on transfer programs. Some of the most striking examples of how these goals may come into conflict are from the early years of the Reagan Administration, when there was a strong policy tilt toward enhancing the target efficiency of transfer programs. This was accomplished by increasing program tax rates on earnings. The AFDC program experienced dramatic increases in tax rates, while increases were more moderate in the FSP. As a consequence of the higher tax rates, program participants faced stronger disincentives to work and the working poor qualified for less assistance.

II. HISTORY OF THE RESEARCH

There exists a large literature on the labor-supply effects of transfer programs, much of it based on analyses of the AFDC program and the negative income tax experiments of the 1970s. Despite the fact that the FSP is one of the country's largest assistance programs, providing benefits to 18.7 million people per month at an annual cost of $13 billion, few studies have been conducted on the labor-supply effects of food stamps. This paucity of research may be due to the fact that food stamps are often received in conjunction with a primary benefit, such as AFDC, SSI,

and UI. In general, it would be inappropriate to analyze the labor-supply effects of food stamps without incorporating the fact that the benefits from these other programs are taxable income under the FSP and also incorporating the jointness of the decisions to participate in these programs. Addressing these types of program interaction can be a daunting analytic task and may have dampened enthusiasm for research on the labor-supply effects of the FSP.

The Food and Nutrition Service has sponsored two empirical studies of the labor-supply effects of food stamps, both of which were conducted by Mathematica Policy Research. The first of these was based upon a sample of 358 female heads of household drawn from the 1979 panel of the Income Survey Development Program, the precursor to the current Survey of Income and Program Participation (SIPP). The second study was based upon a sample of 1,292 non-elderly, non-disabled, unmarried adults without dependents that was drawn from the 1984 panel of SIPP. I am going to review the analytic methods and findings of both of these studies; however, I want to note in advance that a scarcity of food stamp participants in the sample of single adults has caused us to have less confidence in those findings.

III. THE STUDY OF FEMALE HEADS OF HOUSEHOLD

In the study of female heads of household, we developed a model of the joint decisions of the female head regarding her hours of market labor and her household's participation in the AFDC and food stamp programs. A challenging part of the development of the model was the specification of the budget constraints faced by the sample households at different combinations of hours of work and participation (or nonparticipation) in the two programs. A household's budget constraint reflects the tradeoffs it faces between disposable income and leisure. We used our estimates of the model's parameters to derive wage and income elasticities of labor supply that

can be compared with estimates from previous studies and can be used to simulate labor-supply responses to hypothetical changes in rules governing food stamp eligibility and benefits.

The Model. With their guarantee amounts, allowable deductions, and tax rates on income, the food stamp and AFDC benefit formulas introduce incredible complexity into the budget constraints faced by female heads. To cut through this complexity, we categorized the women in our sample according to whether they were performing zero, part-time, or full-time work and we modeled the hours of work decision as a choice among those categories, rather than as a continuous choice among all possible hours of work.

Our empirical model consists of three equations:

- A structural labor-supply equation, in which the trichotomous choice of hours of work is determined by the utility that could be achieved at each of the three levels of work, where utility is assumed to be a function of leisure time and disposable income. Disposable income at given level of work is determined in part by the outcomes of the food stamp and AFDC participation decisions.
- A reduced-form food stamp participation equation, in which the probability of participation is a function of socioeconomic characteristics and disposable income at each of the three levels of work under both participation and nonparticipation.
- A reduced-form AFDC participation equation that is analogous to the food stamp participation equation.

We estimated the three equations simultaneously, allowing for correlation among their disturbance terms. Prior to conducting that estimation, we used estimates of the parameters in a simple wage model to impute potential wage rates to the nonworking women in our sample.

Estimation Results. Using our estimates of two critical parameters in the model, we derived elasticities of hours of work with respect to the net wage rate and nonlabor income. The implied wage elasticity is approximately .3 and the implied income elasticity is approximately -.1. These

elasticities have the same sign, but are roughly one-third the size of elasticity estimates for married women. They more nearly match estimates for married men. The implication of the small elasticities is that the labor supply of female heads is relatively unresponsive to changes in the food stamp and AFDC guarantee amounts and tax rates on earnings.

Simulation Results. We used our model estimates to simulate the effects of changes in the food stamp guarantee amount and tax rate on the work effort of the cases in our sample, about half of whom were simulated participants in the baseline FSP. In interpreting these results, it should be noted that a program change, such as an increase in the tax rate on earnings, may cause some female heads to leave the program and increase their market labor, while serving as a work disincentive for those who remain on the program. Our simulation results reflect the labor-supply responses of both those who leave and those who remain on the FSP in response to a hypothetical program change.

	Baseline FSP Participants	
	Mean Hours per Week	% Change from Baseline
Baseline	9.5	
10% increase in FSP guarantee amount	9.3	-2%
Increase in FSP benefit reduction rate from .30 to .50	9.5	0%
Elimination of FSP	10.5	+11%

Changes in several case characteristics were simulated to have much larger effects on labor supply than changes in the FSP. For example, the simulated effect of an additional year of education is an 8 percent increase in hours of work by the full sample, and the simulated effect of an additional pre-school child is a 42 percent reduction in market labor.

IV. THE STUDY OF UNMARRIED ADULTS WITHOUT DEPENDENTS

Our goal in conducting the study of unmarried adults without dependents was to estimate a model of the joint labor-supply and food stamp participation decisions separately for men and women. The labor supply of this group is of interest because its participation in the Food Stamp Employment and Training Program is mandatory. Unfortunately, our samples of 632 men and 660 women included only 74 food stamp participants, which was not enough to permit us to estimate a food stamp participation equation.

As a fall-back strategy, we eliminated the food stamp participants from our samples and estimated a two-equation model of the choice between zero, part-time, and full-time work and the market wage rate. Like our model for female heads, this model assumes that single adults seek to maximize their utility from leisure and disposable income subject to a budget constraint that is highly nonlinear as a consequence of income and payroll taxes and UI benefits. We used the model estimates to simulate the labor-supply effects of the FSP.

Estimation Results. Our model estimates for single women imply a wage elasticity of hours of work of approximately 1.1 and an income elasticity of approximately -.2. The implied elasticities for single men are only slightly different. These elasticities are 2 to 4 times larger than those we obtained for female heads of household. They are also much larger than existing elasticity estimates for married men, but are in the neighborhood of existing elasticity estimates for married women.

Simulation Results. The larger elasticities for single adults imply greater responsiveness of labor supply to food stamp program changes than is the case for female heads. With the exception of the complete elimination of the FSP, the program changes that we simulated for single adults were smaller than those that we simulated for female heads. We simulated the effects of a 10

percent increase in the program's benefit reduction rate, a change in the structure of the program's earned income deduction, and the elimination of the $10 minimum food stamp benefit for 1 and 2 person households. We found that these changes would reduce the labor supply of cases remaining on the program by 3 to 7 percent, but those reductions would be almost exactly offset by increases in the market labor of cases which exit the program in response to the less attractive benefit schedule. We also found that the complete elimination of the FSP would result in a 25 percent increase in market labor by baseline participants. That is twice the size of the simulated response of female heads to the program's elimination.

BIBLIOGRAPHY

Fraker, Thomas and Robert Moffitt. "The Effects of Food Stamp Benefits on the Market Labor of Female Heads of Household." Report submitted to the Food and Nutrition Service, USDA, under Contract No. FNS 53-3198-3-120. Washington, DC: Mathematica Policy Research, Inc., March 4, 1985.

_____. "The Effects of Food Stamps on Labor Supply: A Bivariate Selection Model." Journal of Public Economics 35 (February 1988): 25-56.

_____. "The Effect of Food Stamp Benefits on the Labor Supply of Unmarried Adults Without Dependent Children." Report submitted to the Food and Nutrition Service, USDA, under Contract No. FNS 53-3198-5-47. Washington, DC: Mathematica Policy Research, Inc., March 10, 1989.